CLAIMS

What is claimed is:

1. An apparatus comprising:

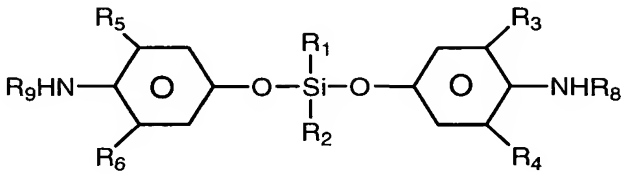
a first substrate comprising a first set of contact points;

a second substrate comprising a second set of contact points coupled to the first substrate through interconnections between a portion of the first set of contact points a portion of the second set of contact points; and

a composition disposed between the first substrate and the second substrate comprising a siloxane-based aromatic diamine.

2. The apparatus of claim 1, wherein the composition comprises a reaction product between a siloxane-based aromatic diamine and an epoxy resin.

3. The apparatus of claim 2, wherein the siloxane-based aromatic diamine has a formula:



Formula I

wherein groups R_1 and R_2 are independently selected from a hydrogen, an alkyl, a substituted alkyl, a cycloaliphatic, an alkyl ether, an aryl, a substituted aryl moiety, and an —OR$_7$ moiety, wherein R_7 is selected from an aliphatic and an aromatic moiety,

wherein groups R_3, R_4, R_5, and R_6 are independently selected from a hydrogen, an alkyl, a substituted alkyl, a cycloaliphatic, an alkyl ether, an aryl, and a substituted aryl moiety, and

wherein groups R_8 and R_9 are independently selected from a hydrogen, an alkyl, a cycloaliphatic, an alkyl ether, an aryl, and a substituted aryl moiety.

4. The apparatus of claim 3, wherein groups R_1 and R_2 comprise a methyl moiety, groups R_3, R_4, R_5, and R_6 comprise a hydrogen moiety, and groups R_8 and R_9 comprise a hydrogen moiety.

5. The apparatus of claim 3, wherein groups R_1 and R_2 comprise a methyl moiety, groups R_3 and R_5 comprise a hydrogen moiety, groups R_4 and R_6 comprise a propyl moiety, and groups R_8 and R_9 comprise a hydrogen moiety.

6. The apparatus of claim 3, wherein groups R_1 and R_2 comprise a methyl moiety, groups R_3, R_4, R_5, and R_6 comprise a methyl moiety, and groups R_8 and R_9 comprise a hydrogen moiety.

7. The apparatus of claim 3, wherein groups R_1 and R_2 comprise a methyl moiety, groups R_3, R_4, R_5, and R_6 comprise a propyl moiety, and groups R_8 and R_9 comprise a hydrogen moiety.

8. The apparatus of claim 3, wherein groups R_1 and R_2 comprise a methyl moiety, groups R_3, R_4, R_5, and R_6 independently comprise one of a hydrogen moiety and a C_1 to C_6 alkyl moiety, and groups R_8 and R_9 comprise a hydrogen moiety.

9. The apparatus of claim 3, wherein one of groups R_1 and R_2 comprises a methyl moiety and the other comprises a phenyl moiety, groups R_3, R_4, R_5, and R_6 comprise a hydrogen moiety, and groups R_8 and R_9 comprise a hydrogen moiety.

10. The apparatus of claim 3, wherein one of groups R_1 and R_2 comprises a methyl moiety and the other comprises a phenyl moiety, groups R_3, R_4, R_5, and R_6 independently comprise one of a hydrogen moiety and a C_1 to C_6 alkyl moiety, and groups R_8 and R_9 comprise a hydrogen moiety.

11. The apparatus of claim 3, wherein one of groups R_1 and R_2 comprises a methyl moiety and the other comprises a an —OR moiety, wherein R_7 comprises an amine,

groups R_3, R_4, R_5, and R_6 independently comprise one of a hydrogen moiety and a C_1 to C_6 alkyl moiety, and groups R_8 and R_9 comprise a hydrogen moiety.

12. The apparatus of claim 1, wherein the second substrate comprises an integrated circuit.

13. The apparatus of claim 1, wherein the first substrate comprises a circuit package and the second substrate comprises a printed circuit board.

14. An electronic assembly comprising:

a first substrate comprising a first set of contact points;

a second substrate comprising a second set of contact points coupled to the first substrate through interconnections between a portion of the first set of contact points a portion of the second set of contact points;

a composition disposed between the first substrate and the second substrate comprising a siloxane-based aromatic diamine; and

a power source coupled to one of the first substrate and the second substrate.

15. The apparatus of claim 14, wherein the second substrate comprises an integrated circuit.

16. The apparatus of claim 14, wherein the first substrate comprises a circuit package and the second substrate comprises a printed circuit board.

17. A method comprising:

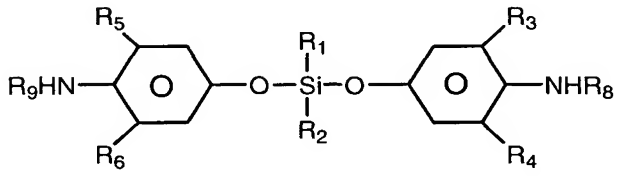
introducing a composition comprising a siloxane-based aromatic diamine in a flowable state between a first substrate comprising a first set of contact points and a second substrate comprising a second set of contact points coupled to the first substrate through interconnections between a portion of the first set of contact points a portion of the second set of contact points; and

curing the composition.

18. The method of claim 17, wherein curing the composition comprises curing at a temperature less than a solder reflow temperature.

19. The method of claim 17, wherein prior to introducing the composition, the method comprises combining a siloxane-based aromatic diamine with an epoxy.

20. The method of claim 17, wherein the siloxane-based aromatic diamine has a formula:



Formula I

wherein groups R_1 and R_2 are independently selected from a hydrogen, an alkyl, a substituted alkyl, an aryl, a substituted aryl moiety, and an —OR_7 moiety, wherein R_7 is selected from an aliphatic and an aromatic moiety,

wherein groups R_3, R_4, R_5, and R_6 are independently selected from a hydrogen, an alkyl, a substituted alkyl, an aryl, and a substituted aryl moiety, and

wherein groups R_8 and R_9 are independently selected from a hydrogen, an aliphatic, and an aromatic moiety.